comprising two whole-color-pass filters corresponding to two pixels, a cyan-pass filter corresponding to one pixel, and a yellow-pass filter corresponding to one pixel, and repeating the arrangement pattern in the vertical and horizontal directions, and

means for separately taking data corresponding to each pixel of the color separation filter, and

[a signal processing circuit for taking four luminance signals and two kinds of color-difference signals, for one of the arrangement patterns, from each pixel data taken out of the solid-state image pickup device; at this time, said signal processing circuit generating two of the four luminance signals by using only the data from the whole-color-pass filters, and generating the remaining two luminance signals by using the data from the whole-color-pass filters and the data of peripheral pixels in the vicinity of the four pixels adjoining vertically and horizontally, and generating the two kinds of color-difference signals by using the data from the cyan or yellow-pass filter and the data from the peripheral pixels.]

a signal processing circuit for taking four luminance signals and two kinds of color-difference signals, for one of the arrangement patterns, from each pixel data taken out of the solid-state image pickup device; at this time, said signal processing circuit generating, among the four luminance signals, two luminance signals in the positions of the two whole-color- pass filters by using only the data obtained from the positions while generating the remaining luminance signals in the positions of the filters transparent to two different kinds of colors by using the chrominance data obtained from the respective positions and the data obtained from peripheral pixels of the four pixels, and generating the chrominance signals by using the date obtained from peripheral pixels of the four pixels including the data obtained from the positions of the filters transparent to two different kinds of colors.--

Claim 2,   line 7, change "color difference signals" to --chrominance signals--.

Claim 3,   line 7, change "color-difference signals" to --chrominance signals--.

4. (Amended) A solid-state color image pickup apparatus as defined in Claim 1 further comprising:

storage means for capturing a chrominance signal outputted from each pixel of the solid-state image pickup device, and storing it;

correlation calculation means for calculating the correlation between a target pixel to be interpolated and plural pixels in the vicinity of the target pixel, said target pixel being any of pixels in the positions of the filters transparent to two different kinds of colors, which are stored in the storage means; and

interpolation means for interpolating the target pixel in a direction along which the calculated correlation is relatively large, and calculating a luminance signal in the position of the target pixel

[A solid-state color image pickup apparatus as defined in Claim 1:

wherein said color separation filter having one arrangement pattern comprising vertically and horizontally adjoining four pixels, comprises a whole-color-pass filter and a cyan-pass filter for the upper two pixels from the left, and a yellow-pass filter and a whole-color-pass filter for the lower two pixels from the left; and

said apparatus further comprising:

storage means for capturing a chrominance signal outputted from each pixel of the solid-state image pickup device, and storing it;

correlation calculation means for calculating the correlation between a target pixel to be interpolated and plural pixels in the vicinity of the target pixel, said target pixel being any of a cyan signal pixel and a yellow signal pixel stored in the storage means; and

interpolation means for interpolating the target pixel in a direction along which the calculated correlation is relatively large, and calculating a whole-color-pass signal in the position of the target pixel].

Claim 13,   line 2, change "any of Claims 5 to 10" to --claim 5--.

                  line 5, change "color-difference signal" to --chrominance signal--.

Claim 14,   line 2, change any of Claims 5 to 10" to --claim 5--.

                  line 5, change "color-difference signal" to --chrominance signal--.

Kindly add the following new claims:

-- 19.   A solid-state color image pickup apparatus as defined in claim 6 wherein, the correlation calculated by the correlation calculation means is smaller than a given threshold, said interpolation means reduces the gain of the chrominance signal corresponding to the pixel.

20.   A solid-state color image pickup apparatus as defined in claim 7 wherein, the correlation calculated by the correlation calculation means is smaller than a given threshold, said interpolation means reduces the gain of the chrominance signal corresponding to the pixel.

21.   A solid-state color image pickup apparatus as defined in claim 8 wherein, the correlation calculated by the correlation calculation means is smaller than a given threshold, said interpolation means reduces the gain of the chrominance signal corresponding to the pixel.

22.   A solid-state color image pickup apparatus as defined in claim 9 wherein, the correlation calculated by the correlation calculation means is smaller than a given threshold, said interpolation means reduces the gain of the chrominance signal corresponding to the pixel.

23.   A solid-state color image pickup apparatus as defined in claim 10 wherein, the correlation calculated by the correlation calculation means is smaller than a given threshold, said interpolation means reduces the gain of the chrominance signal corresponding to the pixel.

24.   A solid-state color image pickup apparatus as defined in claim 6 wherein, when the correlation calculated by the correlation calculation means is smaller than a given threshold, said interpolation means reduces the gain of the chrominance signal corresponding to the pixel, stepwise, according to the correlation.

25.   A solid-state color image pickup apparatus as defined in claim 7 wherein, when the correlation calculated by the correlation calculation means is smaller than a given threshold, said interpolation means reduces the gain of the chrominance signal corresponding to the pixel, stepwise, according to the correlation.

26.   A solid-state color image pickup apparatus as defined in claim 8 wherein, when the correlation calculated by the correlation calculation means is smaller than a given threshold, said interpolation means reduces the gain of the chrominance signal corresponding to the pixel, stepwise, according to the correlation.

27.   A solid-state color image pickup apparatus as defined in claim 9 wherein, when the correlation calculated by the correlation calculation means is smaller than a given threshold, said interpolation means reduces the gain of the chrominance signal corresponding to the pixel, stepwise, according to the correlation.

28.   A solid-state color image pickup apparatus as defined in claim 10 wherein, when the correlation calculated by the correlation calculation means is smaller than a given threshold, said interpolation means reduces the gain of the chrominance signal corresponding to the pixel, stepwise, according to the correlation. --